

Amendments of the Claims:

A detailed listing of all claims in the application is presented below. This listing of claims will replace all prior versions, and listings, of claims in the application. All claims being currently amended are submitted with markings to indicate the changes that have been made relative to immediate prior version of the claims. The changes in any amended claim are being shown by ~~strikethrough~~ (for deleted matter) or underlined (for added matter).

1-6. (Cancelled)

7. (Currently amended): A system to treat diseases based on biological activities, comprising:

- a) at least one biological activity sensing means which senses biological activity information issued by biological activities, and outputs a plurality of input biosignals;
- b) a calculating means which receives the input biosignals, calculates a plurality of stimulation signals for stimulation of an organism using a convolution integral between the input biosignals and at least one impulse response previously calculated from an inverse Fourier transform of a transfer function which is based on a Fourier transform of normal-activity biosignals obtained from normal biological activities and the input biosignals, and outputs the stimulation signals for stimulation of the organism;
wherein the impulse response is calculated from an inverse Fourier transform of a transfer function which is based on a Fourier transform of normal activity biosignals from the normal biological activities; and
- c) an organism stimulating means which receives the stimulation signals, and stimulates the organism based on the stimulation signals.

8. (Previously presented): The system of claim 7, wherein the biological activity sensing means is selected from the group consisting of electrodes and pressure sensors.

9. (Previously presented): The system of claim 7, wherein the biological activity sensing means senses biological activity information selected from the group consisting of sympathetic nerve activities, parasympathetic nerve activities, blood flow, blood pressure, body temperature, electrocardiogram, electroencephalogram, and various biochemical markers.

10. (Currently amended): The system of claim 7, wherein the organism stimulating means is selected from the group consisting of electrical stimulation means; and stimulation means with the use of devices for drug administration.

11. (Previously Presented): The system of claim 7, wherein the calculating means comprises:

- at least one amplifier to amplify the input biosignals;
- at least one analog-to-digital converter, to convert the input biosignals from analog signals to digital signals; and
- at least one analyzer to calculate stimulation signals to be transferred to the organism stimulating means.

12. (Currently amended): A system to treat diseases based on biological activities, comprising:

- a) at least one biological activity sensing means which senses biological activity information issued by biological activities, and outputs a plurality of input biosignals;
- b) a calculating means which receives the input biosignals, calculates a plurality of stimulation signals for stimulation of an organism using a convolution integral between the input biosignals and an impulse response previously calculated from an inverse Fourier transform of a transfer function which is based on a Fourier transform of normal-activity biosignals obtained from normal biological activities and the input biosignals, and outputs the stimulation signals for stimulation of the organism;

wherein the impulse response is calculated from an inverse Fourier transform of a transfer function which is based on a Fourier transform of normal activity biosignals from the normal biological activities; and

c) an organism stimulating means which receives the stimulation signals calculated by the calculating means, and stimulates the organism based on the stimulation signals;

wherein the calculating means includes discriminating means which determine whether the input biosignals are caused by normal biological activities or by abnormal biological activities;

wherein the calculating means does not output the stimulation signals when the input biosignals are determined to be caused by normal biological activities; and

wherein the calculating means outputs the stimulation signals when the input biosignals are determined to be caused by abnormal biological activities.

13-18. (Cancelled)

19. (New): A method of treating diseases based on biological activities, comprising the steps of:

a) calculating at least one impulse response from an inverse Fourier transform of a transfer function which is based on a Fourier transform of normal-activity biosignals from normal biological activities;

b) sensing biological activity information issued by biological activities, and outputting a plurality of input biosignals based on the biological activity information;

c) calculating a plurality of stimulation signals for stimulation of an organism using a convolution integral between the impulse response and the input biosignals, comprising the substep of discriminating whether the input

biosignals are caused by normal biological activities or by abnormal biological activities; and

d) outputting the stimulation signals for stimulation of the organism only if the input biosignals are determined to be caused by abnormal biological activities.

20. (New) The method of claim 19, further comprising, after step d), the steps of:

e) receiving the stimulation signals output in step d); and

f) stimulating the organism based on the stimulation signals output in step d).

21. (New): The method of claim 20, wherein step f) comprises stimulation selected from the group consisting of electrical stimulation; and stimulation with the use of devices for drug administration.

22. (New): The method of claim 19, wherein step b) is performed using a device selected from the group consisting of electrodes and pressure sensors.

23. (New): The method of claim 19, wherein, step b) senses biological activity information selected from the group consisting of sympathetic nerve activities, parasympathetic nerve activities, blood flow, blood pressure, body temperature, electrocardiogram, electroencephalogram, and various biochemical markers.

24. (New): The method of claim 19, wherein step c) is performed using a device that comprises:

at least one amplifier to amplify the input biosignals;

at least one analog-to-digital converter, to convert the input biosignals from analog signals to digital signals; and

at least one analyzer to calculate the stimulation signals.